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### Non-Working Time, Income Inequality, and Quality of Life Comparisons

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**NON-WORKING TIME, INCOME INEQUALITY,  
AND QUALITY OF LIFE COMPARISONS\***  
**The Case of the U.S. vs. the Netherlands**

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## **Abstract**

The distribution of well-being in society and comparisons of well-being across societies depend both on the amount of inequality at the national level and also on the national average level of well-being. Comparisons between the U.S. and western Europe show that inequality is greater in the U.S. but that average GDP/capita is also greater in the U.S., and most Americans have higher standards of living than do Western Europeans at comparable locations in their national income distributions. What is less well-known is that (depending on the country) much or all of this gap arises from differences in the level of working hours in the U.S. and in Western Europe. Cross-national comparisons of well-being have typically relied on the methodology of generalized Lorenz curves (GLC), but this approach privileges disposable income and cash transfers while ignoring other aspects of welfare state and labor market structure that potentially affect the distribution of well-being in a society. We take an alternative approach that focuses on the value of time use and the different distributions of work and family time that are generated by each country's labor market and social welfare institutions. We show that reasonable estimates of the greater contribution to well-being from non-market activities such as the raising of children or longer vacations overturn claims in the literature that the U.S. offers greater well-being to more of its citizens than do Western European countries.

## **Non-Working Time, Income Inequality, and Quality of Life Comparisons: The Case of the U.S. vs. the Netherlands**

### **Well-being in more and less egalitarian countries**

Are people better off in a country that is more egalitarian or in one that is less egalitarian? This question, which has been debated for centuries, has no easy answer. Some scholars argue that inequality arises naturally from economic activity and that constraints on the production of inequality are by their nature government-induced constraints on individual freedom. From this perspective, they have argued that equality limits freedom and thus is inferior on moral grounds to inequality. Others observe that inequality can also limit the freedom of action of the relatively poor, both because those from disadvantaged backgrounds are handicapped in their efforts to compete for material rewards in the marketplace and because the rich are able to use money to gain disproportionate influence on outcomes in the political process.

A second major issue concerns how inequality affects material standard of living. As many scholars have noted, increases in inequality with fixed aggregate income or wealth make many people worse off in order that a few people are better off. If everyone has equal moral worth, and if there are diminishing returns to wealth, then it is easy to show that society is worse off under such transfers. However, others argue that inequality promotes growth by increasing the incentives for productive economic activity. If true, the increase in aggregate income can in theory make people who are lower in the income distribution better off than they would be if incomes were spread more equally.

In practice, the comparison between more equal and less equal societies is made difficult by the complex way that income is earned and redistributed in modern societies. The welfare

state provides in-kind services as well as monetary transfers. To some extent, these transfers redistribute income from high earners to low earners, but they also smooth income for the same individual over his or her life course. The welfare state also affects the distribution of income through its regulation of the labor market, and labor unions also affect distribution by negotiating the provision of non-monetary and monetary benefits for their members. The complexity of the bundle of income and services makes it difficult to establish the precise distribution of social welfare within even one society, let alone the extent to which aggregate welfare differs between societies.

The difficulty of obtaining a comprehensive comparison of social welfare across countries calls instead for efforts to evaluate major components of societal difference in order to evaluate their potential importance in the overall societal comparison. Garfinkel, Rainwater, and Smeeding (2005), for example, recently made an effort to evaluate the impact of education and health benefits on the distribution of wellbeing across a set of industrialized countries. They found that the inclusion of these benefits substantially narrows differences in inequality between the U.S. and a set of Western European countries because the U.S. spends such a large amount of its GDP on education and especially on health care than do European societies, including on those lower in the income distribution. However, the conclusion they reached is sensitive both to assumptions about the distribution of these benefits, and also (and perhaps more critically) on their assumption about whether Americans (and particularly lower-income Americans) get as much health and education per dollar of expenditure as do Europeans. Other scholars (Rainwater and Smeeding 1997) have demonstrated the impact of a nation's demographic structure on cross-national differences in inequality.

In this paper, we address a different component of cross-national differences. Aside from the structure of taxes and social welfare benefits, perhaps the most obvious difference between

countries commonly called liberal social welfare states and the social democratic and conservative welfare states concerns working hours. There is a large difference in the average working hours in the United States and in many parts of Western Europe. While Western Europeans once worked more than Americans, they steadily reduced their hours of work throughout the 1970s and 1980s to the point where they now work substantially fewer hours than do Americans. There are four major components to this difference. The first concerns the retirement age; Western Europeans have retired at earlier ages than Americans since the 1980s. The second concerns unemployment. Unemployment rates in many Western European societies were much lower than American rates in the 1960s, but they climbed above U.S. levels by the 1980s or early 1990s, and are often targeted as a societal “cost” of lower inequality in Europe. A third component is the shorter number of weeks worked per year (including paid vacation weeks) and hours worked per week by the typical working-age adult in Europe. These differences are partly linked to the successful efforts of European unions to reduce the definition of full-time work relative to the U.S., and also stem from the greater accommodation that many European societies have made to the dual demands of work and family via maternity leave and the availability of part-time work for working mothers. The fourth component concerns vacation time, with paid vacations typically much longer in Western European societies than in the United States.

Taken together, these components comprise a striking difference between the typical hours of work per capita or per worker in the United States and the typical western European society. Table 1 displays statistics from the OECD Employment Outlook about work hours per capita and work hours per worker. Per capita working hours in the Netherlands, France, and Germany – to take only a few examples - are less than 80% of the American level. The source of this discrepancy is partly due to a higher employment to population ratio in the U.S. than in most

European countries, but the average worker in the U.S. also works more hours than does his or her European counterpart. The average French job has only 90% of the hours of the average American job, while the average Dutch job has only 80% of the hours of the average American job.

Relative to the differences in work hours, differences in productivity in the U.S. and Western Europe are much smaller, as can be seen in the GDP per hour worked data from Table 1. These data show that several European countries including the Netherlands, Belgium, France, Norway, and Ireland all had higher GDP *per hour worked* than did the U.S. However, the GDP *per capita* was 18% lower in the Netherlands than in the U.S. in purchasing power parity (PPP) adjusted currency, 22% lower in Belgium, and 28% lower in France. A similar pattern applies to other western European countries. The German GDP per working hour was 91% of the U.S., but the GDP per capita is 29% lower than in the U.S., while in Sweden the 11% gap in GDP per working hour grows to a 22% gap in GDP per capita.

- Table 1 about here -

Whether someone would prefer to live in a European welfare state or a liberal market-oriented society certainly depends in large part on where the person is located in the skills and earnings distributions. Someone with poor job opportunities would probably prefer a welfare state where his income is raised by security benefits. A very successful worker, on the other hand, might prefer a liberal welfare state where taxes are lower and earnings are high at the top of the distribution. But which country would a randomly chosen risk-neutral individual typically choose? The most plausible answer is that he would choose the country where he was more likely to be better off. Generalized Lorenz curves provide a way of operationalizing this calculation. If the populations of two countries are ranked on the same metric, the cross-over point indicates the percentile-ranges that are better off in each country. The location of the cross-

over point depends both upon the shape of the two distributions and on differences in the average income. At one extreme, where average incomes are the same but where the top earning person earned almost all the income in the less-egalitarian country, then 99.99+% of the population in the more equal country would be better off than their counterparts (in percentile terms) in the less equal country. It would also be possible for average incomes to be the same but for the majority of the population in a more unequal country to be better off than their counterparts in a more equal country.<sup>1</sup> Generalized Lorenz curves also demonstrate the potentially critical importance of aggregate income in determining the relative standing of two populations. A large majority of the population in a high-inequality country may be better off than their counterparts in a more egalitarian country solely because the aggregate per-capita income in the inegalitarian country is significantly greater than in the egalitarian country.

The large difference in hours worked between the U.S. and several of the Western European welfare states creates just this situation. Figure 1 shows generalized Lorenz curves for the U.S., France, Belgium, and the Netherlands, where the cumulative shares of income in each of these countries is compared to total income in the U.S. after conversion to U.S. dollars based on PPP.<sup>2</sup> Figure 2 then shows *hypothetical* generalized Lorenz curves that would be obtained if the incomes of France, Belgium and the Netherlands were scaled up so that the average working hours of these countries equaled the average working hours in the U.S.<sup>3</sup> In the actual GLCs, the American distribution overtakes the Belgian and Dutch distributions at the 30<sup>th</sup> percentile. This implies that the bottom 30% of the population in the Netherlands and Belgium are better off than their counterparts in the U.S., but that most Americans are better off than most inhabitants of either of these two European countries. The American distribution is actually higher than the French distribution at all quantiles. However, if the European distributions were scaled up to the point where average working hours were the same as in the U.S., the actual overtaking point for



the U.S. would be at the 60<sup>th</sup> percentile for France, at the 80<sup>th</sup> percentile for the Netherlands, and not until the 95<sup>th</sup> percentile for Belgium. Clearly, almost all the income advantage in the U.S. stems from the greater amount of work done by American workers relative to their European counterparts.

The European pattern of work hours stems partly from specific features of European social welfare and labor market institutions. More generous pension and unemployment benefits might lower the incentive to work (Stier and Lewin-Epstein, 2003). Higher wages for low skill labor or higher employer taxes to pay for social benefits might lead to a reduced demand for labor and thus an overall reduction in average working hours in European countries (Berdasi and Gornick, 2000; Blau and Kahn, 2002). Within the context of an approach such as that used by Garfinkel et al. (2005), the reduced hours becomes a cost of the welfare state through reduced aggregate income, which may or may not be made up by the economic value of the unemployment compensation, pensions, or maternity benefits that are provided by the state or by employers. Some conservative commentators (such as David Brooks of the New York Times) have taken this reduction of working hours to be an indication that munificent social welfare states are not viable in the long-term because of large reduction in aggregate income related to the lowered average work time.

If the loss of income from the reduced working hours were the cost of heightened equality, it would appear that the price is very high. If instead, the people of western Europe are gaining a benefit to the reduction in work hours that offsets the income loss, then it becomes important to incorporate this benefit in any systematic comparison between these countries and the United States. We demonstrate the importance of non-work hours through a comparison of the U.S. and the Netherlands.

- Figures 1 and 2 about here -

## **Non-working time and well-being**

Scholars do not all agree on the proper interpretation of the lower working hours in western Europe. Some see the lower work hours as forced and therefore as representing a net loss in aggregate well-being. Prescott (2004), for example, recently argued that the work-hours difference is due to the tax systems of the U.S. and European countries, although his study implies elasticities that are too high to be believable by many economists (Alesina, 2005). Others argue that the lower levels of work in Europe are forced on European workers by employers who lower labor demand in response to the high costs of labor regulation and of employer taxes that help pay the costs of the European welfare states (Berdasi and Gornick, 2000; Blau and Kahn 2002). This conception does not apply to the Netherlands even though Dutch welfare state benefits are generous. First, the unemployment rate in the Netherlands has been lower than that in the United States in every year since 1997, while the employment-to-population ratio in the two countries is very similar. Second, calculations on Dutch data (OSA Labour Supply Panel 2002, see Appendix A for results) show that only 6% of Dutch employees report that they would like to work more hours than they do at the moment; only one third of this group think that they will not be able to realize their preference for more working hours within one year; and only about half of these ‘pessimists’ mention demand side factors as a reason for their expected inability to work as many hours as they would like. In other words, only about one percent of employees in the Netherlands actually feel constrained due to demand side factors.

Other authors agree that non-working time has value and therefore offsets reductions in well-being from the foregone income: non-working time offers the opportunity to be with one’s children, to spend time on hobbies and to feel less stressed out (Osberg 2002a; Osberg 2002b). Blanchard (2004) argues that the higher work levels of Americans stem from the American preference for higher levels of consumption as opposed to higher levels of leisure. Alesina et al

(2005) show through a series of analyses that union and regulation variables can statistically explain the bulk of the difference in hours worked in the U.S. and Western Europe. They theorize that the coordinated reduction in work and expansion of vacation expands the utility of leisure time and reinforces the desire in Europe for what Alesina et al called “vacation en masse,” as evidenced by the fact that people who work fewer hours report higher levels of happiness in the Eurobarometer surveys. Meanwhile, Bianchi, Robinson, and Milkie (2006) report in their trend analysis of time diaries that American mothers actually spend as much or more time with their children than do Dutch mothers both if they are employed and if they are not employed, while American fathers spend nearly as much time with children as do Dutch fathers. What suffers in the U.S., according to the data analyzed by Bianchi et al, is the amount of time spent with one’s spouse, time spent with friends, time for civic pursuits, sleep time, and leisure time, and this shortfall produces a heightened feeling of time strain among American working parents.

The Dutch OSA data endorse the view that non-working time contributes to well-being. Table 2 shows that two thirds of the part-time workers claim not to work full-time because they want to have enough time for household and caring tasks. Another 12 percent mention having enough time for hobbies as the reason. Reported health problems are a third reason given by Dutch adults for not working and not looking for a job. Taken together, these statistics give the impression that the Dutch assign positive value to the hours of non-work time that they gain by not being full-time workers. Our task is to incorporate this value into comparative studies of well-being.

- Table 2 about here -

Almost by definition, non-working time has at least the value of the earnings that one foregoes when the decision not to work is voluntary. Imagine, for example, a mother who attaches high value to raising her children herself and therefore chooses a part-time job even

though it carries the loss of potential income.<sup>4</sup> If we expressed well-being purely in terms of income, we would conclude that her choice of fewer working hours and a corresponding reduction in household income would produce a net reduction in well-being. This interpretation, however, would clearly give an overly narrow and hence unrealistic picture of the situation. If a mother who has the choice to work full time or part time chooses to work part time, she by definition values the added time that she spends with her family, child, and friends at least as much as the income she foregoes by not working. She has accepted a lower income in exchange for a living situation that she values more than what she gives up. Because her time use is part of her well-being, the correct interpretation of a strictly voluntary choice is that her well-being is higher than it would be if she worked full time.<sup>5</sup>

One objection to this interpretation might be that mothers make their decision about labor supply in the context of their partner's situation, and feel that a decision to work more hours would require a corresponding drop in their partner's hours because of the high value they place on family care of the children. But this objection does not undermine the above interpretation; it would still be true that women (and men) accept the drop in household income as an acceptable price for the opportunity to combine childcare with time for spouse, friends, and other leisure activities.

A second possible objection concerns the costs and availability of child care. If child care of a given quality was simply much more expensive in one country than in the other, then a greater net reduction of work hours in the first country might be a response to child care prices rather than a true difference in preferences. In this case, the higher cost of child care would produce a true reduction in well-being.

With respect to the U.S. and the Netherlands, this objection appears to be unfounded. Available evidence (Immervoll and Barber 2005) suggests that the price structure for child care is

not materially different in the two countries. The fees charged by child care centers in the Netherlands are higher - 29% of an average production worker's wages (APW) – than the 18% in the U.S., but this difference in fees does not take into account rebates, childcare benefits and tax reductions, all of which affect the net cost of child care. The net out-of-pocket costs as a percent of the average production wage (APW) are lower for couples with two full-time earnings in the Netherlands than in the U.S. at household incomes equaling 200% of the APW, and the country-gap in favor of the Netherlands is even larger when family income is lower. Child care subsidies imply a higher implicit marginal tax on income and this must be taken into account to get an accurate comparison of well-being. However, as we show later in the paper, these implicit tax rates are not large enough to offset the argument that Dutch women gain net positive value from a voluntary reduction in work hours.

The failure to include the value of non-work time in calculations of national well-being amounts to treating the consumption of goods and the choice of non-work activities asymmetrically, which does not make good theoretical sense. The fallacy can best be appreciated through a simple example concerning the utility gained from consumption of goods and services. Imagine that the population of two countries have identical income distributions but differ strongly in their consumption preferences, with people in one country having a much stronger preference for cars than do people in a second country. If the income distributions in the two countries were recomputed using after-tax and also after-car-purchase income, it would appear that people were on-average worse off in the country with the higher preference for cars, and so a proper comparison should use pre-car purchase disposable income, which corresponds exactly to the logic of including the value of time in comparisons of well-being. With respect to the car example, one could object to the inclusion of pre-car purchase income if the excess car purchases in the first country were not a voluntary choice, but rather were forced upon people by some

adverse condition in their environment, such as low-density communities or the denial of mass transit options in opposition to the preferences of the country's population. If, for example, a denial of mass transit were the only reason for the country difference in the rate of car purchases, it would in fact be more accurate to compute the distribution of well-being in the two countries on an after car-purchase/after mass-transit-cost basis. The issues raised by this hypothetical example are identical to the issues raised by cross-national differences in the distribution of non-work time, and so in this paper we formally treat time in the same way we treat consumption in order to explore its potential importance for cross-national comparisons of living standards.

The issues raised by cross-national differences in paid vacation time are in many respects similar to the issues raised by non-work time. However, there is relatively little variation in vacation time in the Netherlands, and so workers cannot as easily express an individual preference for longer-vacations and less pay relative to shorter vacations and higher pay. The growth in the length of paid vacations in the Netherlands was the product of a series of agreements between Dutch labor unions and Dutch employers, and the content of these agreements then diffused to cover most of the Dutch work force (Alesina et al 2005). The country differences therefore are not the direct consequence of individual preferences in the U.S. and the Netherlands. Another reason why the typical difference in paid vacation time does not imply differing individual tradeoffs between income and leisure is that the Dutch are typically paid for their longer vacations and holidays. Clearly, however, there must be a tradeoff; it is a standard result in labor economics that workers indirectly pay for a large share of non-wage benefits through lower hourly wages. In this paper we consider the impact of adjustments for cross-national differences in both hours of work and paid vacations and holidays on cross-national differences in the quality of life as implied by income statistics.

As noted earlier, the U.S. and the Netherlands differ in their level of inequality and differ greatly in average working hours. The Netherlands has relatively low poverty and low inequality compared with the U.S. both because of its more equal distribution of market income and because of the redistributive impact of the Dutch welfare state (Rainwater and Smeeding 1997).

Meanwhile, out of 10 OECD countries studied by Jacobs and collaborators, the U.S. has the highest number of working hours and the Netherlands the lowest: 1976 versus 1368 annual hours for individuals or 72.3 versus 51.9 weekly hours for couples (Jacobs and Gornick 2001, Jacobs and Gerson 2004). An important reason for the low number of working hours in the Netherlands is the huge proportion of part-time working women: 58 percent of the employed women in the Netherlands works less than 30 hours a week, compared to 41 percent in the U.K., 34 percent in Germany, 24 percent in France, 21 percent in Sweden, and only 16 percent in U.S. (OECD 2000). In addition, the average number of paid vacation weeks varies from 3.9 in the United States to 7.6 in the Netherlands.

These differences in work time correspond to attitudinal differences between the Dutch and the Americans that show a much stronger family orientation in the Netherlands. Table 3 shows that Dutch adults are much more likely than Americans to state that they will hard only if it doesn't interfere with their family life. In contrast, a majority of Americans report that they would give priority to work even if their family life suffered. These striking differences in attitudes and work behavior make the two cases of the U.S. and the Netherlands very suitable for evaluating how country differences in non-work time affect cross-national comparisons of well-being.

--Table 3 about here--

## **Analytic Strategy**

Our approach consists of three steps. First, we make a baseline comparison of the income distributions of the U.S. and the Netherlands for households where the head was between 25 and 55 years of age; this age range was chosen to exclude most of the retirement-related behavior from our comparison. Second, we construct an adjustment measure for both countries that raises the income of *satisfied* part-timers – meaning those work part-time instead of full-time on a voluntary basis-- to a full-time income, and we then measure the impact of this adjustment on cross-national comparisons of well-being. Finally, we construct a second adjustment measure that also takes the value of vacation time into account, and again we compare the distribution of well-being in the two countries after accounting for the value of both types of nonwork time..

For the United States, we analyzed data from the 2000 March Current Population Survey, which is the survey that is incorporated in the Luxembourg Income Study (Luxembourg Income Study (LIS) Micro database 1999-2000). For the Netherlands, we made use of two datasets. The 1999 data come from the Dutch Socio-Economic Panel (SEP), which is the Dutch contribution to the Luxembourg Income Study. We supplemented these data with 2000 data from the Family Survey Dutch Population (De Graaf, De Graaf, Kraaykamp & Ultee, 2000). The LIS/SEP consists of 2,717 households with positive incomes where the head was between 25 and 55 years old, while the Family Survey Dutch Population contains information on 554 households with these characteristics. Personal disposable household income was operationalized in the usual way as the sum of earned and unearned income plus government transfers and credits and minus taxes.<sup>6</sup> In line with LIS recommendations and general practice, top and bottom coding have been applied, since people tend to underestimate very low incomes and overestimate very high incomes (Kenworthy 2004). Incomes lower than 1 percent of the mean are set to 1% of the mean income, and incomes over 10 times the median are set to 10 times the median income.



In order to make comparisons of income across countries, it is important to establish whether the micro-level measures of income are equally accurate across the countries. A standard approach for doing this is to compare the estimate of national income obtained by aggregating the income reported in sample surveys with estimates obtained from national accounts data. We have done this for the American data and for the two surveys for the Netherlands. In the Dutch case, we compared the estimate of the population household disposable income estimated from the two surveys with household net disposable income for 1999 and 2000 from the annual accounts by institutional sector that are reported by Statistics Netherlands. We found that the Family Survey Dutch Population accounted for 87.8% of the income reported in the national accounts, and that the Dutch LIS/SEP data accounted for 88.9% of the income reported by national accounts. For the American case, we relied on the recent report from the Ruser, Pilot and Nelson (2004), who compared personal income reported in the national accounts data and in the 2002 March CPS. The population estimate of money income in the CPS was \$6.446 trillion, which compares with \$8.678 trillion reported in the state personal income figures reported to the U.S. Bureau of Economic Analysis. Most of this discrepancy consists of income received on behalf of individuals by pension plans, nonprofit institutions serving households, and fiduciaries. After adjusting for all differences in the types of income collected by these two methods, the authors identified an \$804 billion shortfall in the CPS, which implies that the CPS accounted for 88.9% of the comparable income reported in the U.S. national accounts data, which is very similar to the figures obtained for the Netherlands. These calculations do not prove that the datasets are comparable because they do not measure the same thing (the Dutch calculation is after taxes, while the U.S. calculation is before taxes), and because the social welfare and tax systems are quite different in the two countries. Nonetheless, they do

suggest at least rough comparability in the data, which supports the utility of the analyses reported in this paper.

In order to make the two Dutch surveys even more comparable with each other, we scaled them by the ratio of their fractions of national accounts income, but this standardization is so small as to be unnoticeable in the charts to follow. We then converted household income to household equivalent income by dividing household incomes by the square root of household size. Finally, we made incomes comparable between the two countries by re-expressing them in purchase power parities in 2000 US dollars (Firebaugh 1999). Conversion factors have been derived from the OECD (2000-euro = .925 2000-US dollar, <http://www.oecd.org>). For the Dutch LIS/SEP data, first a conversion into euros (1 euro = 2.20371 guilders) and into 2000 consumer prices (1999-euro = .974 2000-euro, Statistics Netherlands, [statline.cbs.nl](http://statline.cbs.nl)) was required. For the Family Survey Dutch Population 2000 only a conversion from guilders into euros was needed before applying the PPP conversion.

A central issue for our analysis is whether individuals who work less than full time do so voluntarily. For the United States, this information is available in the 1998 General Social Survey. For the Netherlands, we used the OSA Labour Supply Panel data of 2002 collected by the Institute for Labour Studies. Both sources contain the question whether one prefers to work more, fewer, or the same number of hours a week, given that the wage rate remains the same. The distribution of preferences for work hours differs strongly between the United States and the Netherlands. According to Table 4, three quarters of Dutch employees are satisfied with their present working hours and related income situation, whereas the proportion of Americans who would not want to change their work hours is only 57 percent. The proportion that prefers fewer hours is higher among the Dutch than among the Americans, and more Americans than Dutch prefer to increase their hours and income (panel A). American and Dutch part-time working

women are more satisfied with their work schedules than their full-time working counterparts. In contrast, many part-time American men are not satisfied and want to work more (panel B). Because the proportion of part-time workers is larger in the Netherlands than in the United States and because more Dutch than Americans are satisfied, the size of the group of *satisfied part-timers* is much larger in the Netherlands. One third of the Dutch work force consists of part-time workers who do not want to change their work hours, while only 9% of American workers fall into this category (panel C).

- Table 4 about here -

We used the information from the OSA Labour Supply Panel data of 2002 to adjust the incomes reported in the Dutch SEP and the Family Survey Dutch Population. Using the OSA data, we assigned full-time earnings to all part-time workers who expressed a preference for the same or fewer working hours and then computed the percentage difference between original and adjusted income for all twenty quantiles of the Dutch income distribution. When adjusting the incomes of satisfied part-time workers to full-time incomes, we calculated full time income as the observed wage rate times 39 hours for both the Netherlands and the U.S. (the average number of working hours for Dutch full-timers is 39 hours, while the average in the U.S. is 46 hours). We then applied these quantile adjustments to the Dutch 1999 LIS/SEP data and also to the 2000 Family Survey Dutch Population. For the American case, we used the 1998 General Social Survey, which contains a question about whether one would prefer to work more and earn more, work the same and earn the same, or work less and earn less. The adjustment measure is constructed similarly as for the Netherlands, and the result was then used to adjust quantiles of the income distribution as calculated with the 2000 CPS.<sup>7</sup>

These adjustments can only be an approximation of the true value of the non-worked hours of satisfied part-time workers. This value, which in economics is commonly referred to as

the reservation wage, is heterogeneous in the population. Figure 3 shows the result for a hypothetical portion of the income distribution, which we define as those with identical household incomes, identical part-time wages, and an identical number of work hours. For simplicity, we show the distribution as a normal distribution which is truncated at €12, which in this figure represents the per hour average net increment in disposable income that would be obtained by working full-time instead of part-time for satisfied part-timers. Because these part-timers are satisfied, the value distribution is truncated on the left; if any of the voluntary part-timers assigned a lower value to non-work time, they would by definition be working instead.

Because the tax systems of both countries are progressive, our approximation is above the lower-bound of its value for this population. However, we still conclude that our estimate is conservative, in the sense that it is below the *mean* value for this subpopulation. Note that even if the distribution is symmetrical, the left truncation creates a right skew and pushes the mean above the median. For our measure to be too high, it would have to be true that a flattening of the tax system (such that the hourly take home pay on the non-worked hours by satisfied part-time workers would equal the hourly take home pay on the worked hours) would all by itself draw more than 50% of the satisfied part-timers into the full-time labor market. The Netherlands has a large fraction of women working part-time throughout the income distribution, and notably also in the bottom third of the income distribution, where the Dutch income tax was relatively flat in the period covered by our data. This fact suggests that the labor supply response to a flat tax would not be as large as 50%, and therefore our adjustment for part-time work is conservative.<sup>8</sup>

Further evidence that our assigned value is conservative comes from considerations of the wage elasticity of supply. Goldin (1990) reported a range of estimated wage elasticities of supply for American women from various studies as between 0.4 and 0.8 for the 1950-1980 period. Van Soest et al. (1990) estimated a wage elasticity of supply for Dutch women of 0.66. Our data

show that the average Dutch female part-time worker works about 20 hours per week. If 50% of these workers became full-time workers, this would raise their average work hours to 30. The wage elasticity of supply is defined as

$$\Delta L / L = \eta \Delta w / w$$

where  $L$  is labor supply and  $w$  is the net (after tax) wage. If  $\Delta L / L$  is 0.5 (a 50% increase), then  $\Delta w / w$  must equal  $0.5/0.66$ , which equals .76, a 76% increase. So let  $W$  be the gross wage, let  $r_1$  be the existing “high” tax rate and  $r_2$  be a new “low” tax rate that would cause the average net wage for the additional hours worked to equal the average net wage on the actual hours worked. Since the net wage from the flat tax must be 1.76 of the net wage from the existing tax rate, it follows that

$$(1 - r_2)W = 1.76(1 - r_1)W$$

And so

$$r_2 = 1.76r_1 - .76$$

This implies a reduction in the marginal tax rate from 40% to 0%, or from 50% to 12.5%, or from 60% to 30%. These steps are considerably larger than the typical step-ups in the Dutch tax across the quantiles of the Dutch income distribution. It follows, therefore, that our estimates of the average monetary value of non-work time for Dutch satisfied part-time workers across the income quantiles are conservative estimates of their actual value.

We have no data that show the proportion of workers in the Netherlands and the U.S. who would voluntarily give up their vacations for more paid work hours. However, we can illustrate the maximum potential impact of the cross-national difference in well-being in the two countries by assuming that all of the vacation time in both countries is preferred over work, and by valuing the vacation time in both countries as equal to the length of the vacation multiplied by each

person's wage. According to the OECD (2004) (see also Alesina, Glaeser, and Sacerdote 2005), the average length of holidays and vacation time in the Netherlands for full-year equivalent workers is 7.6 weeks a year, while in the United States the average is 3.9 weeks a year for full-year household heads. Using the Dutch LIS/SEP data and the CPS data, we computed the number of weeks worked per year for workers located in each 5% quantile of both the Dutch and the U.S. household income distribution. We assumed that the average length of vacations and holidays in each quantile was the country average multiplied by the ratio of the average weeks worked in that income quantile divided by 52. We then assumed that the monetary value of this vacation and holiday time equaled the number of weeks of vacation multiplied by that person's wage, and we added this quantity to the household income of each person. The percentage difference per 5% quantile between the original unadjusted household income and the household income adjusted for voluntary part-time work and vacation time is the adjustment measure we applied to the top and bottom coded, size-adjusted and PPP adjusted equivalent household income for the U.S. and the Netherlands. This valuation makes similar assumptions as was earlier discussed in the part-time adjustment and has the same offsetting biases; on the one hand, people would get less money for the additional work because of the progressive tax system, but on the other hand, their valuation of vacation time may be higher than the foregone earnings even under a flat tax.

### **Results: well-being adjusted for satisfaction with working hours and vacation time**

Table 5 shows the average incomes per 5% quantile before and after adjustment, while Figure 4 compares the ranked household size-adjusted disposable income distributions of the Netherlands and the U.S.. The cross-over point (the point at which Americans are better off than their Dutch equivalents on ranked income) is between the 20<sup>th</sup> and 25<sup>th</sup> percentile when the CPS is compared with the Family Survey and is between the 35<sup>th</sup> and 40<sup>th</sup> percentile when the CPS is compared with the Dutch LIS/SEP data. The income advantage in the American distribution

remains fairly small through the bottom half of the distribution, but above that point, the American advantage is marked and becomes very large above the 80<sup>th</sup> percentile. Table 5 shows that the mean income in the Family Survey is only 74% of the mean CPS income, while the mean Dutch LIS/SEP income is only 76% of the mean CPS income.

- Table 5 and Figure 4 about here -

Figure 5 then takes account of the value of non-work time of satisfied part-time workers in the two countries. Naturally, the adjusted income lines lie above the original income lines for both countries, because we have monetarized the value of non-work time for satisfied part-time workers. However, because a greater portion of Dutch workers are satisfied to work less than full time than is true in the U.S., the adjustment is larger in the Netherlands. As a consequence of this adjustment, the Dutch mean incomes have risen to 78% and 80% of the mean CPS income for the Family Survey and the Dutch LIS/SEP, respectively. The cross-over point for the CPS and the Family Survey has not changed, but the cross-over point for the CPS and the Dutch LIS/SEP has moved to between 45 and 50%, which means that nearly half the Dutch households – specifically those in the lower half of the income distribution – are better off than their American counterparts. Furthermore, the income gap between American and Dutch households in the upper half of the distribution has also noticeably shrank, although the American households are still clearly better off.

- Figure 5 about here -

Figure 6 shows the consequence of combining the adjustment for the monetary value of non-working time for satisfied part-time workers with the monetary value of vacations and holidays. The vacation adjustment obviously increased equivalent household income in both countries, because now each household gained the monetary value of vacation time as well as the monetary value of the difference between part-time and full-time hours per year for satisfied part-

time workers. Because Dutch workers take longer vacations, this adjustment was larger in the Netherlands than in the United States. Whereas the cross-over point using the Family Survey data was previously between the 20<sup>th</sup> and 25<sup>th</sup> percentile, the addition of the value of vacations pushes the cross-over point to between the 35<sup>th</sup> and 40<sup>th</sup> percentile. When the CPS is compared with the Dutch LIS/SEP, the Dutch situation is still more favorable, as the cross-over point rises to between the 50<sup>th</sup> and the 55<sup>th</sup> percentile. The income lines of the two countries now track each other quite closely until about the 70<sup>th</sup> percentile, at which point they diverge. Furthermore, the mean adjusted income in the two Dutch surveys rises to 82% and 84% of the mean American value; in other words, the two adjustments equal roughly 1/3 of the overall difference between the mean household income in the Netherlands and the U.S. Even though average well-being remains higher in the U.S., a substantial fraction of the Dutch population or even a majority (depending on the dataset) achieve a higher level of well-being than their American counterparts when country differences in the use of time are brought into the calculation.

- Figure 6 about here -

## **Discussion**

The stratification consequences of the welfare state has been a central concern of comparative research for decades. The extent of inequality reduction was one of the three factors considered by Esping-Andersen (1990) in his assignment of countries to categories within his well-known typology. However, his approach addresses only a limited aspect of the broader question of how national institutions shape both the level and distribution of a country's quality of life. It is limited both by an overemphasis on income and by a failure to address cross-national comparisons of well-being, which depend on country averages and within country-inequality as well as realistic measures of well being that can be applied across countries. To limit attention to within-country inequality makes the problem easier, but it is ultimately unsatisfying.



A complete accounting of cross-national differences in well-being is probably beyond the scope of empirical research, and only partly because of the sheer complexity of the task. A more fundamental theoretical problem is that people do not share the same preferences for life style even within countries and even within relatively homogenous subgroups of national populations. This limitation notwithstanding, we can go much further in the study of comparative welfare than is currently achieved in the literature, because many dimensions of modern life can be ranked at least as consistent with “western values” if not with the preferences of each and every member of society. Thus, just as we generally allow that more income is better than less income, we also treat education and health as what economists would call “normal goods.” When the national welfare system provides in-kind services, the task for social science is to formulate methods for assessing their value to the population, which involves the assessment of the quality of the provided service and the inequality in its provision, so that the value of the service can be “added” to income measures in order to provide a more complete accounting of well-being. The difficulty of solving this problem has yielded the default solution of omitting qualitative aspects of well-being that are of tremendous importance to the daily life of people and that vary systematically with different “varieties of capitalism” and different welfare states.

There are a couple of reasons why this task has not proceeded very far as of now. One reason is the inherent difficulty in assessing and “pricing” qualitative services such as health care or education. Some of the problem also arises from fragmentation within social science. Research since the 1980s on “new social movements” identified issues such as the environment which clearly affect the national quality of life and which is distributed across the population in unequal amounts. Indeed, the growing research on communities identifies a host of quality of life issues such as crime, pollution, congestion, access to social services, quality of transportation, and various forms of “social disorganization.” The “social exclusion” literature similarly

identifies a class of inequality-related metrics such as unemployment or child poverty, and cross-national research routinely makes comparisons across countries on these metrics. The use of so many metrics for portraying the many aspects of social welfare and social inequality from one perspective is just an acknowledgment of the multidimensional character of social life. However, the literature has generally failed to establish the impact of these various dimensions on national well-being, on inequality in well-being, or on comparisons of well-being across countries. The literature is also far from measuring the tradeoffs between income and those aspects of life quality that are not readily reducible to market transactions.

In this paper, we have privileged the issue of time use. This choice is justified on several grounds. The most obvious justification is the large difference in hours worked between Americans and many Europeans and the obvious impact of this difference on measures of GDP per capita. Time is also more readily monetarized than are many important contributors to life quality such as health care or education. The third reason is the irony inherent in the asymmetric treatment of goods and time in standard comparisons of national well-being that are based on income.

In 1943, the psychologist Abraham Maslov asserted that humans possessed a “hierarchy of needs,” that higher needs were not activated until lower order needs were satisfied, and that what he termed the highest need, the need for “self-actualization” was often not accomplished through work. Its satisfaction, in fact, often required the foregoing of income for “leisure” which would allow cultural and artistic pursuits. This presumption that “self-actualization” was often best obtained outside of work – which is enshrined in economics in the Slutsky decomposition that posits offsetting “income” and “substitution” effects on leisure as a consequence of rising wages -- led to the prediction that average hours of work would diminish as societies became wealthier. This prediction was borne out in western Europe, though not in the U.S., or at least not

during the “prime” working years. During these years, which coincide with the normal time in the life course when adults raise children, the complaint in the U.S. has been less about inadequate time for “self-actualization” than about work-family conflict, which is felt most keenly by women with or without partner present who have children in the home (OECD 2004; see also Bianchi et al. 2006). A considerable body of research has established that high levels of work hours and working separate shifts (which is related to the level of hours of work) are associated with marital problems for both men and women, which obviously has a negative impact on overall quality of life (Presser 2000; Crouter, Bumpass, Head, and McHale 2001; Gager and Sanchez 2003; Poortman 2005).

Our comparison focused only on part of the difference in working hours between the U.S. and the Netherlands, namely that portion which involves the different distribution of part-time workers in the ages 25-55 between the two countries. Our adjustment measure could have been extended further to consider the category of satisfied non-workers (including early-retirees), which, like part-time work, is a product of a country’s market and welfare-state characteristics. Involuntary non-employment is likely to be higher in more generous welfare states because of the higher tax wedge (which varies with the particular method by which social welfare benefits are financed), but at the same time voluntary non-work is likely to be higher in welfare states because higher social benefits give people the choice of not working without suffering severe financial hardship. The practical difficulty of adjusting the income of satisfied non-workers is that the wage rate of these non-workers is not readily observable. By limiting our adjustments for satisfied non-work only to those who were in the labor force, we provided a conservative assessment of the impact of different distributions of working time on the comparison of Dutch and American quality of life.

Our study focused only on two countries. However, the qualitative result of our study would probably be similar had we used France, Germany, the United Kingdom, or Norway, all of which have considerably higher levels of female part-time work than does the United States (OECD 2005). Welfare states seem better capable of offering their population the number of working hours they wish because they protect their populations against economic privation. People who would not be happy in a full-time job because their health is not good or because they do not like to make heavy use of child care have the opportunity to choose to work fewer hours without encountering severe financial hardship. The case of Israel, in contrast, is arguably an exception that at least supports the rule. In Israel, the preferences of women have been shifting from part-time to full-time work, and this shift may have been driven at least partially by a reduction in welfare state benefits (Cohen and Stier 2006). If we take this characteristic of welfare states into account when comparing living standards across countries, our tentative conclusion is that the aggregate gains in quality of life from working reduced hours offset at least a portion of the income gap between European welfare states and the United States.

## Notes

<sup>1</sup> This situation could arise if the bottom deciles of the more unequal country lived in extreme poverty while everyone else enjoyed slightly higher incomes than their counterparts in the more equal country.

<sup>2</sup> The data are from Gottschalk and Smeeding (1999), appendix table 1, and are taken from the Luxembourg Income Surveys for the U.S. in 1991, Belgium in 1992, the Netherlands in 1991, and France in 1984.

<sup>3</sup> The scaling is done under the simplifying assumption that the mean of the country distributions would be shifted up, but that the shape of the distributions would remain the same.

<sup>4</sup> We could instead frame the example as a joint choice of a woman and her partner, but the result is the same.

<sup>5</sup> It would also be possible for someone to incorrectly anticipate the full consequences of her choice of time over income. In a context like that of the Netherlands, which is the empirical example of this paper, such mistakes can be corrected because labor demand is high, and therefore mobility between work and nonwork is relatively easy.

<sup>6</sup> CPS and LIS/SEP household income consists of earnings from wage and salary work, self-employment income, farm income, unemployment compensation, worker's compensation, social security, supplemental security, public assistance, veteran's benefits, survivor's income, disability income, retirement income, income from interest, dividends, and rents, educational assistance, child support, alimony, financial assistance payments, the earned income tax credit, and other income, from which federal and state income tax, FICA, federal retirement, and property taxes were subtracted. See also <http://www.lisproject.org/techdoc/sumincvar.htm> (downloaded April 5, 2007). The Family Survey Dutch Population consists of the following income components: wage and salary work including bonuses, self-employed income, unemployment compensation, social security, disability income, (early) retirement income, old age pension, income from interest and dividend, alimony, study grants, allowance from parents. It are net amounts. Household income is the sum of net income of both spouses.

<sup>7</sup> Respondents were asked to indicate which of the 23 categories, ranging from less than 1,000 dollars to over 110,000 dollars, reflected their personal net income. We randomly assigned an income to each respondent within the ranges from the category to which he or she belongs. For example, if a respondent indicated to earn between 20,000 and 22,499 dollars a year, this respondent has been assigned an income that is randomly selected from all incomes between 20,000 and 22,499 dollars. The median income lies between 25,000 and 30,000 dollars. That is why we set the minimum income of the lowest category to 250 dollars (that is 1% of the median) and the maximum income of the highest category to 250,000 dollars (that is 10 times the median). We repeated the procedure of random assignment ten times, and considered the mean income of these ten rounds to be the original income. We applied these adjustments to the 2000 CPS data as they are contained in the LIS.

## References

- Alesina, Alberto, Edward Glaeser, and Bruce Sacerdote. 2005. "Work and Leisure in the U.S. and Europe: Why so Different?" NBER Working Paper.
- Bianchi, Suzanne M., John P. Robinson, and Melissa A. Milkie. 2006. *Changing Rhythms of American Family Life*. New York: Russell Sage Foundation.
- Cohen, Yinon and Haya Stier. 2006. "The Rise in Involuntary Part-Time Employment in Israel." *Research in Social Stratification and Mobility*. 24:41-54.
- Crouter, Ann C., Bumpus, Matthew F., Head, Melissa R. & McHale, Susan M. 2001. "Implications of Overwork and Overload for the Quality of Men's Family Relationships." *Journal of Marriage and Family* 63 (2): 404-416.
- De Graaf, Nan Dirk, Paul M. De Graaf, Gerbert Kraaykamp and Wout C. Ultee (2000) Family Survey Dutch Population 2000 [machine readable data set]. Nijmegen: Department of Sociology, Nijmegen University.
- Esping-Andersen, Gøsta. 1990. *Three Worlds of Welfare Capitalism*. Princeton, NJ: Princeton University Press.
- Firebaugh, G. 1999. "Empirics of world income inequality." *American Journal of Sociology* 104:1597-1630.
- Gager, Constance T.; Sanchez, Laura. 2003. "Two as One? Couples Perceptions of Time Spent Together, Marital Quality, and the Risk of Divorce". *Journal of Family Issues*. Vol. 24. pp. 21-50
- Garfinkel, Irwin, Lee Rainwater, and Timothy M. Smeeding. 2005. "Welfare State Expenditures and the Redistribution of Well-Being: Children, Elders, and Others in Comparative Perspective." Luxembourg Income Study Working Paper 387.
- Goldin, Claudia Dale. 1990. *Understanding the Gender Gap : An Economic History of American Women*. New York and Oxford : Oxford University Press.
- Gottschalk, Peter, and Timothy M. Smeeding. 2000. "Empirical evidence on income inequality in industrialized countries." Pp. 261-307 in *Handbook of Income Distribution*, Volume 1, edited by A. Atkinson, B. and F. Bourguignon. Oxford: Elsevier.
- Jacobs, Jerry A. and Kathleen Gerson. 2004. *The Time Divide*. Cambridge, MA: Harvard University Press.
- Jacobs, Jerry A. and Janet C. Gornick. 2001. "Hours of paid work in dual earner couples: the U.S. in cross-national perspective." Luxembourg Income Study Working Paper No. 253. Syracuse, NY, Center for Policy Research, Syracuse University. March.
- Hayden, Anders. 2003. "International Work-Time Trends: The Emerging Gap in Hours." *JustLabour*. 2:23-35.
- Kenworthy, Lane. 2004. *Egalitarian capitalism: jobs, incomes, and growth in affluent countries*. New York: Russell Sage Foundation.
- Luxembourg Income Study (LIS) Micro database. 1999-2000. harmonization of original surveys conducted by the Luxembourg Income Study: Asbl. Luxembourg, periodic updating.
- Maslov, Abraham. 1943. "A Theory of Human Motivation." *Psychological Review* 50: 370-396.
- Organization of Economic Cooperation and Development. 2000. *Employment Outlook 2000*. Paris: OECD.
- Organization of Economic Cooperation and Development. 2004. *Employment Outlook 2004*. Paris: OECD.
- Organization of Economic Cooperation and Development. 2005. *Employment Outlook 2005*. Paris: OECD.

- Osberg, Lars. 2002a. "Time, money and inequality in international perspective." Luxembourg Income Study Working Paper No. 334. Syracuse, NY, Center for Policy Research, Syracuse University. November.
- . 2002b. "Understanding growth and inequality trends: the role of labour supply in the USA and Germany." Luxembourg Income Study Working Paper No. 302. Syracuse, NY, Center for Policy Research, Syracuse University. April.
- Poortman, Anne-Rigt. 2005. "How Work affects divorce-- the mediating role of financial and time pressures." *Journal of Family Issues* 26: 168-195.
- Presser, Harriet. 2000. "Non-standard work schedules and marital instability." *Journal of Marriage and the Family* 62: 93-110.
- Rainwater, Lee and Timothy Smeeding. 1997. "Demography or Income Packaging: What Explains the Income Distribution of the Netherlands?" LIS Working Paper Number 169.
- Ruser, John, Adrienne Pilot, and Charles Nelson. 2004. "Alternative Measures of Household Income: BEA Personal Income, CPS Money Income, and Beyond. Working paper.
- Stier, H. and N. Lewin-Epstein. 2003. "Time to work: A comparative analysis of preferences for working hours." *Work and Occupations* 30:302-326.
- Van Soest, Arthur, Isolde Woittiez, and Arie Kapteyn. 1990. "Labor Supply, Income Taxes, and Hours Restrictions in the Netherlands." *Journal of Human Resources* 25: 517-558.

**Table 1: Hours worked per worker, hours worked per capita, GDP per capita, and GDP per hour worked for the United States and selected Western European countries (2005)**

	Hours worked per worker			Hours worked per capita			GDP per hour worked (USD)			GDP per capita (USD)		
	total	as % of US	gap in % points	total	as % of US	gap in % points	total	as % of US	gap in % points	total	as % of US	gap in % points
Austria	1656	91	-3	836	97	-3	40.1	83	-17	33,569	80	-20
Belgium	1534	84	-29	616	71	-29	52.9	109	9	32,549	78	-22
Denmark	1551	85	-8	796	92	-8	43.3	90	-10	34,445	82	-18
Finland	1714	94	-9	783	91	-9	40.1	83	-17	31,389	75	-25
France <sup>1</sup>	1546	85	-29	617	71	-29	49.0	101	1	30,245	72	-28
Germany	1437	79	-22	677	78	-22	44.0	91	-9	29,758	71	-29
Ireland	1638	90	-11	773	89	-11	50.5	104	4	39,034	93	-7
Italy	1801	99	-14	747	86	-14	38.1	79	-21	28,471	68	-32
Luxembourg	1557	85	21	1,051	121	21	64.7	134	34	67,976	163	63
Netherlands	1367	75	-20	688	80	-20	50.1	104	4	34,457	82	-18
Norway	1360	75	-21	680	79	-21	63.5	131	31	43,164	103	3
Portugal	1685	92	-5	824	95	-5	24.1	50	-50	19,879	48	-52
Spain	1669	92	-15	739	85	-15	36.9	76	-24	27,284	65	-35
Sweden	1587	87	-12	761	88	-12	43.0	89	-11	32,683	78	-22
Switzerland	1659	91	7	925	107	7	39.0	81	-19	36,058	86	-14
United Kingdom	1669	92	-7	801	93	-7	40.1	83	-17	32,151	77	-23
United States	1824	100	0	865	100	0	48.3	100	0	41,789	100	0

<sup>1</sup> Includes overseas departments

Source: OECD Compendium of Labor Productivity, 2006

Statistics for Austria are hours worked per job.

Statistics for the UK and the US are 2004 data taken from the OECD Employment Outlook 2005, Statistical Annex Table F



**Table 2: Main reasons not to work full-time**

	<b>total</b>		<b><i>I want to work same hours</i></b>		<b><i>I want to work more hours</i></b>		<b><i>I want to work fewer hours</i></b>	
	N	%	N	%	N	%	N	%
Dutch part-time workers (age 25-55)								
I want to have enough time for household and caring tasks	583	64.6	452	66.7	50	51.5	81	63.3
I want to have enough time for hobby's etcetera	109	12.1	87	12.8	3	3.1	19	14.8
I cannot work more hours with this employer	50	5.5	23	3.4	22	22.7	5	3.9
Education or courses	27	3.0	20	2.9	6	6.2	1	0.8
Health problems	42	4.7	25	3.7	8	8.2	9	7.0
I have a second job	13	1.4	10	1.5	1	1.0	2	1.6
Other reason	70	7.8	55	8.1	6	6.2	9	7.0
Don't know	9	1.0	6	0.9	1	1.0	2	1.6
Total	903	100	678	100	97	100	128	100
	<b>total</b>		<b>men</b>		<b>women</b>			
	N	%	N	%	N	%		
Dutch adults who are out of the labor force (age 25-55)								
Insufficient child care facilities	9	1.3			9	1.5		
My family situation does not allow me	99	14.6			99	16.5		
I have other significant tasks at home	243	35.8	6	7.4	237	39.6		
I have other significant tasks outside the home	23	3.4			23	3.9		
Early retirement	2	0.3	2	2.4				
Health problems	240	35.3	65	83.0	175	29.1		
There will be no job for me anyway	14	2.0			14	2.3		
Social security benefit is sufficient to live on	2	0.3			2	0.4		
Other reason	46	6.9	5	7.1	41	6.9		
Total	678	100	78	100	600	100		

Source: OSA 2002

**Table 3: Differences in work ethics between the United States and the Netherlands**

	US	NL
I only work as hard as I have to	8	7
I work hard but only if it doesn't interfere with family life	37	64
I work as best as I can even if this interferes with family life	55	29
	100	100
Proud of job and firm (scale score from 1 to 5)	3.5	2.6
% (strongly) agree		
It is important in a job that income is high	80	58
It is important in job that it offers opportunity to advance	89	79

Source: General Social Survey 1998 (US) and Cultural Changes 1997 (NL)

**Table 4: Satisfaction with working hours in the Netherlands and the U.S. (percentages)**

Panel A: preference for working hours (if wage remains the same)												
	total		men		women							
	NL	US	NL	US	NL	US						
more	7	32	4	38	10	28						
same	75	57	76	55	74	59						
less	19	10	21	8	16	13						
	100	100	100	100	100	100						
Panel B: preference for working hours by working hours												
	total				men				women			
	NL		US		NL		US		NL		US	
	part	full	part	full	part	full	part	full	part	full	part	full
more	12	2	35	32	13	2	62	36	12	2	26	28
same	77	73	56	57	75	76	29	57	77	64	65	58
less	11	24	9	11	13	22	10	8	11	35	9	14
	100	100	100	100	100	100	100	100	100	100	100	100
Panel C: distribution of preferred and current working hours												
	total		men		women							
	NL	US	NL	US	NL	US						
part-time - more	5	5	1	5	9	6						
<b>part-time - same</b>	<b>33</b>	<b>9</b>	<b>9</b>	<b>2</b>	<b>60</b>	<b>15</b>						
part-time - less	5	1	1	1	8	2						
full-time - more	1	27	2	33	0	22						
full-time - same	42	48	67	52	14	45						
full-time - less	14	9	19	7	8	11						
	100	100	100	100	100	100						

Source: General Social Survey 1998 (U.S.) and OSA 2002 (the Netherlands)

only working population between age 25 and 55; for Netherlands self-employed are excluded

part-time has been defined as less than 35 hours, full-time as 35 hours or more

**Table 5: Household incomes before adjustment, after satisfied part-time adjustment, after satisfied part-time and vacation adjustment**

	Before adjtsments			After satisfied part-time adjustment			After satisfied part-time and vacation adjustment		
	US CPS <sup>1)</sup>	NL LIS/SEP <sup>2)</sup>	NL FNB <sup>3)</sup>	US CPS	NL LIS/SEP	NL FNB	US CPS	NL LIS/SEP	NL FNB
5	2200	6465	6886	2250	6877	7325	2434	8247	8785
10	6647	10175	9028	7094	10808	9590	7503	12397	11000
15	8776	12129	9790	9198	12966	10466	9775	14755	11910
20	10626	13413	10641	10986	14345	11380	11474	16085	12760
25	12373	14405	11596	12787	15112	12165	13538	17068	13740
30	14054	15407	12685	14281	16372	13479	15222	18300	15067
35	15819	16493	13908	15864	17530	14783	16514	19385	16346
40	17577	17487	15013	17656	18385	15783	18704	20539	17633
45	19415	18340	15820	19474	19447	16775	20448	21534	18575
50	21261	19204	16804	21485	20842	18237	22384	22915	20051
55	23237	20165	17334	23285	22167	19055	24466	24255	20850
60	25276	21213	18163	25479	23139	19812	26878	25265	21632
65	27490	22161	19849	27997	24051	21542	28953	26112	23388
70	29893	23297	21564	30050	25699	23787	31589	27831	25761
75	32544	24475	23117	33288	26449	24981	34372	28585	26998
80	35625	25850	25367	35813	28163	27636	37302	30423	29855
85	39497	27720	27402	40212	30244	29897	41665	33025	32647
90	44998	29934	31027	46270	31316	32460	47820	34533	35794
95	53986	33113	37152	56480	35289	39593	58350	38101	42748
100	83614	45875	61084	84650	49746	66239	86878	52778	70276
Average	27320	20865	20310	27827	22311	21717	28927	24301	23654
	1.00	0.76	0.74	1.00	0.80	0.78	1.00	0.84	0.82

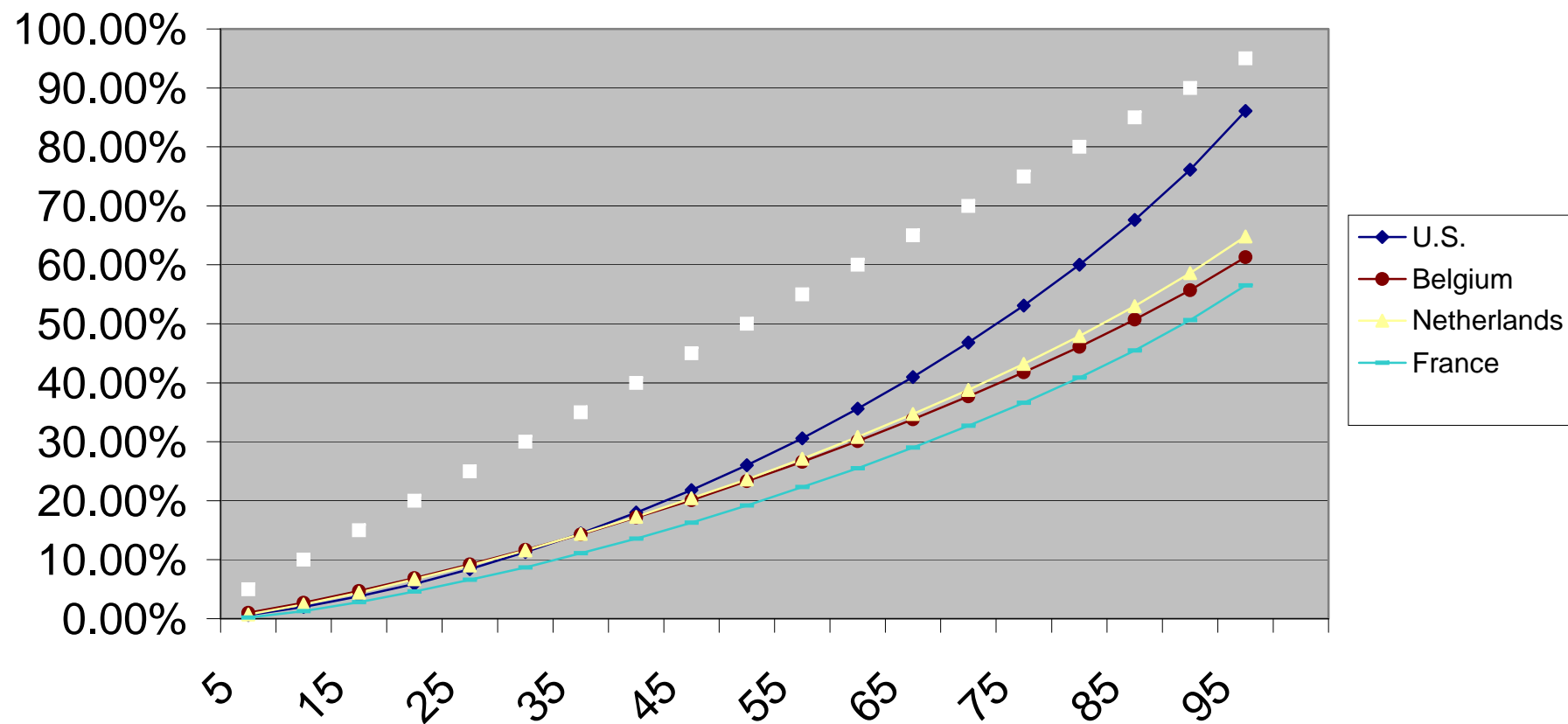
<sup>1)</sup> U.S. March CPS 2000

<sup>2)</sup> Dutch LIS/SEP 1999

<sup>3)</sup> Family Survey Dutch Population 2000

top and bottom coded, size-adjusted equivalent disposable household income in 2000 US dollar

**Figure 1. Generalized Lorenz Curves for the U.S., Belgium, the Netherlands, and France**



**Figure 2. Generalized Lorenz Curves, Scaling Countries to their GDP per Working Hour**

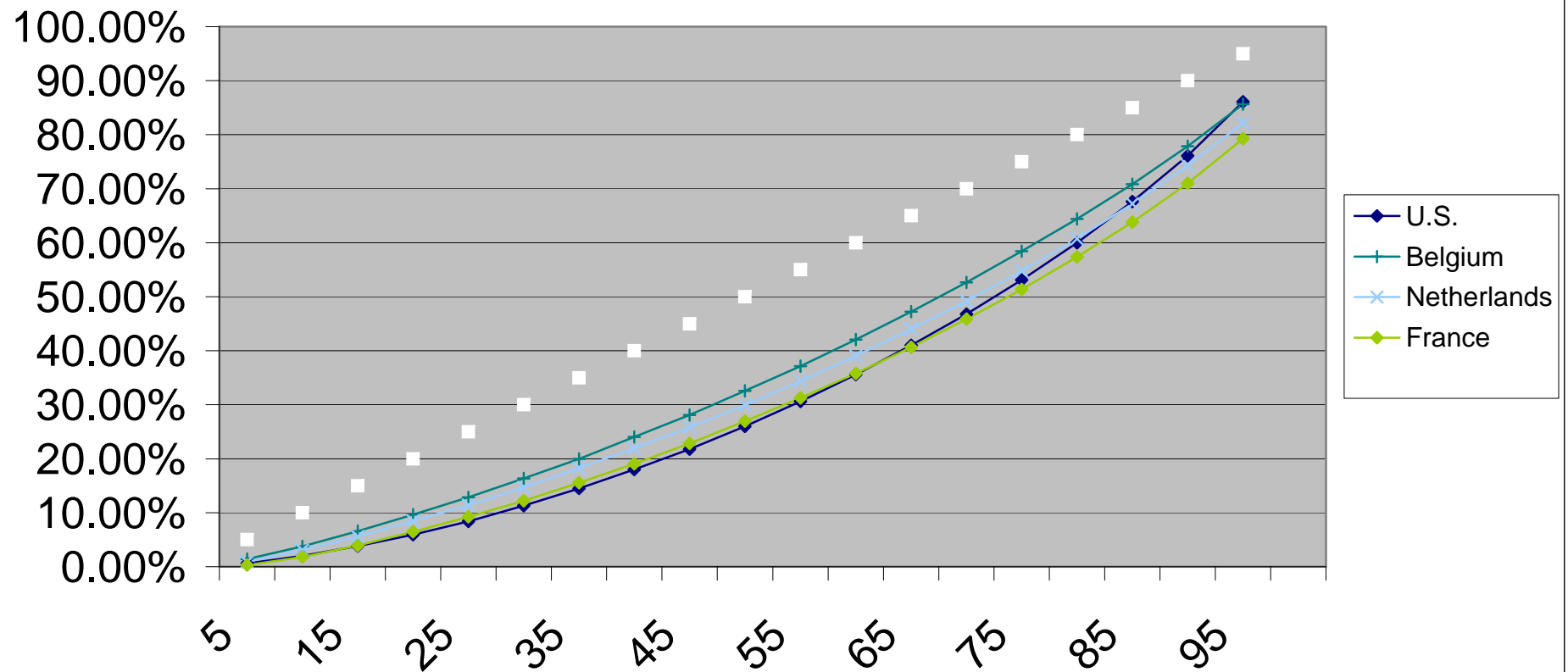
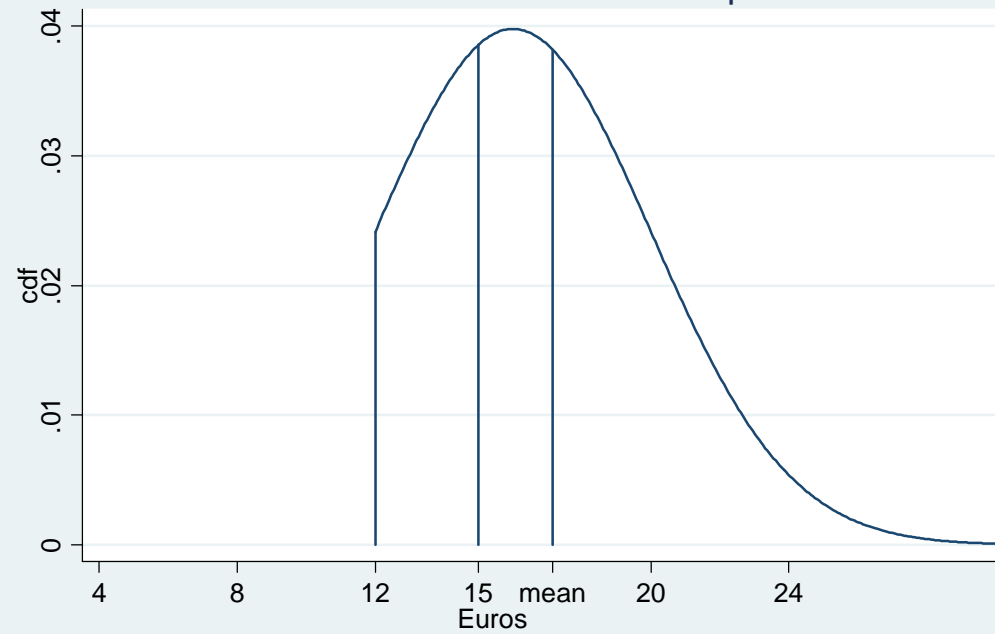
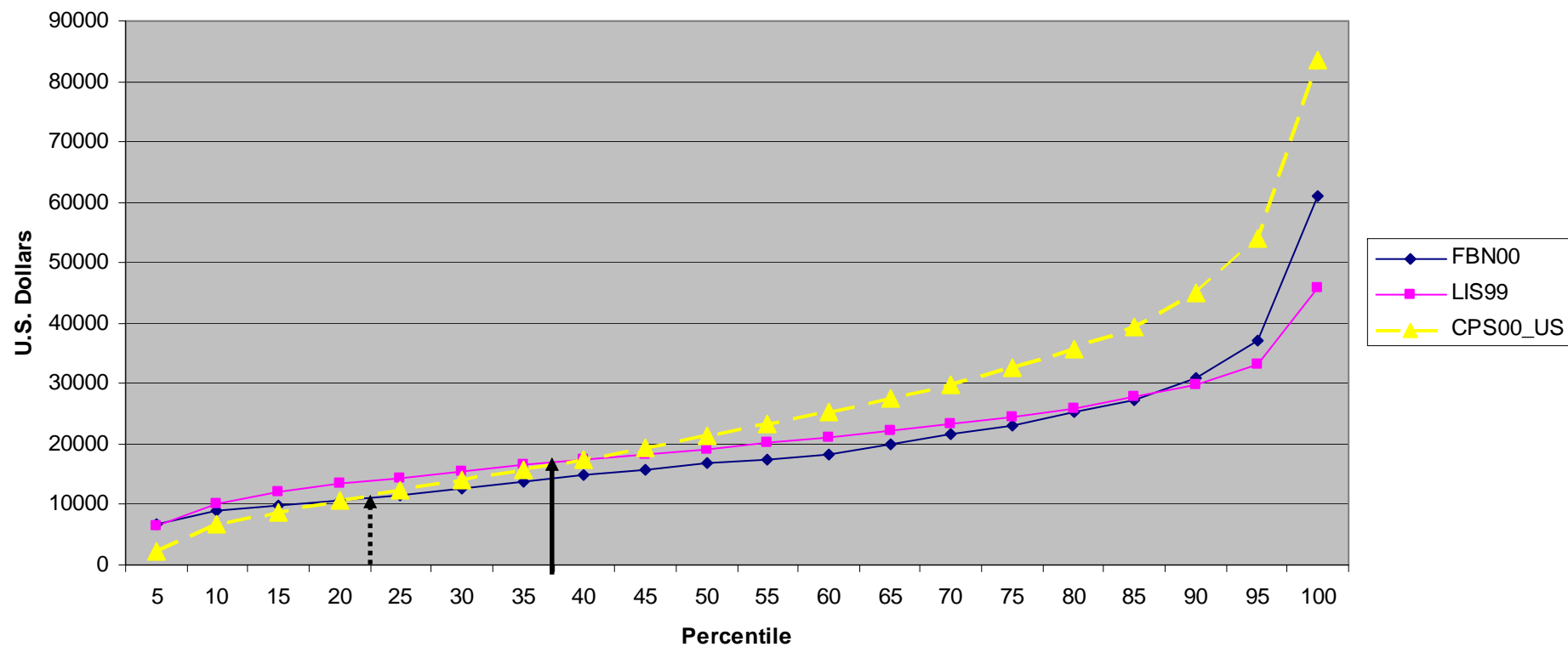


Figure 3. Hypothetical distribution of the monetarized value of the unworked hours for Dutch part-timers

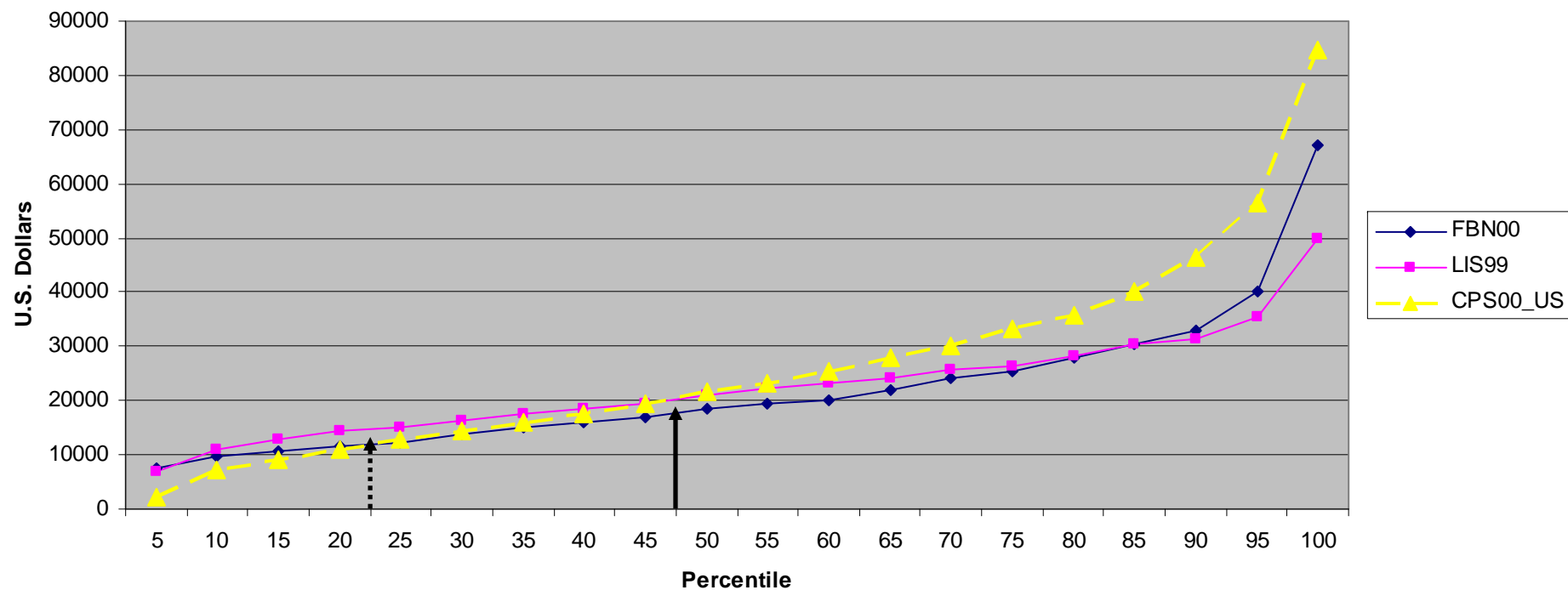


**Figure 4. Ranked household size-adjusted disposable income of the U.S. and the Netherlands before adjustment in PPP-adjusted U.S. Dollars as of 2000 for households whose head is 25-55**

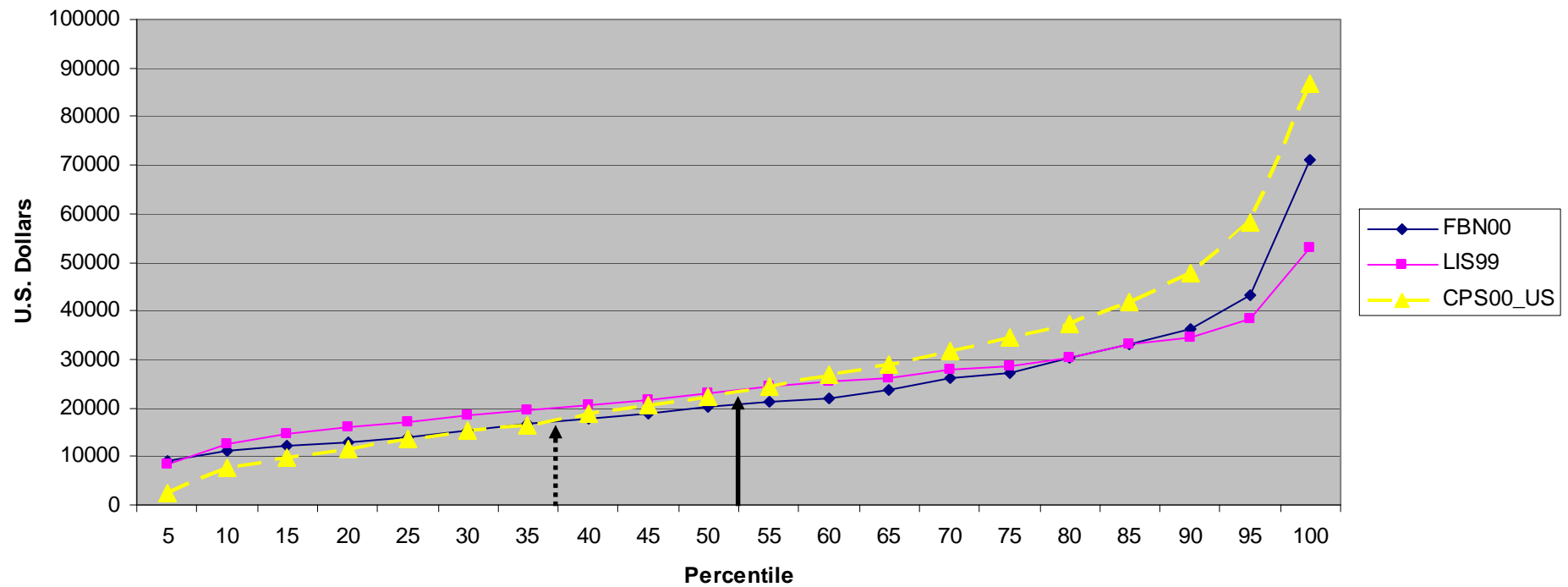




**Figure 5. Ranked household size-adjusted disposable income of the U.S. and the Netherlands in PPP-adjusted U.S. Dollars as of 2000, after adjusting for differences in desired part-time work, for households whose head is 25-55**



**Figure 6. Ranked household size-adjusted disposable income of the U.S. and the Netherlands in PPP-adjusted U.S. Dollars, adjusting for differences in desired part-time work and the wage-indexed value of vacations, for households whose head is 25-55**



# Appendix A: Working hours in the Netherlands: choice or constraint?

<i>Satisfaction with working hours</i>	N	%		
I want to work the same number of hours as I do now	1887	74.9		
I want to work more hours	148	<b>5.9</b>		
I want to work fewer hours	484	<b>19.2</b>		
			<i>I want to work more hours</i>	<i>I want to work fewer hours</i>
<i>Do you think you can realize your preferences within one year?</i>	N	%	N	%
yes	73	50.3	131	27.3
no	49	<b>33.8</b>	300	<b>62.5</b>
don't know	23	15.9	49	10.2
<i>Why do you think not to be able to realize your preferences? (more answers possible)</i>	N	%	N	%
My employer does not like this change	19	<b>38.9</b>	106	<b>35.0</b>
My job does not allow this change	5	<b>10.6</b>	141	<b>47.1</b>
Because of care for children	10	19.4	10	3.2
Because of health	4	8.1	3	0.9

Source: OSA 2002, employed population aged 25-55

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